

Upper Devonian conodonts associated with a large placoderm fish skull from the Canning Basin, Western Australia

John A. Long*

Abstract

Conodonts retrieved from limestone encasing the skull of a large placoderm fish, from an unknown location in the south-eastern Canning Basin, indicate an age of mid-Famennian (toIIB) because of the concurrent presence of the following taxa: *Nothognathella palmatiformis*, *Nothognathella* sp. nov. A. Druce 1976, *Palmatolepis glabra pectinata*, *P. quadrantinodosa inflexa*, *P. quadrantinodosa inflexoidea*, *P. marginifera* s.s., *Polygnathus triphyllatus*, *P. glaber* s.s. and *P. germanus* s.s. The assemblage represents a palmatolepid-polygnathid biofacies dominated by palmatolepids, and is typical of muddy outer shelf to sandy inner shelf environments. The occurrence of certain taxa which have only been previously recorded in the Canning Basin from the Virgin Hills Formation, together with the lithology of the specimen, and palaeoecological information afforded by the conodonts, suggests that the specimen was derived from the uppermost section of the Virgin Hills Formation.

Introduction

A large dinichthyid placoderm fish skull has recently been described as a new genus, *Westralichthys* Long (1987) even though the exact location and lithological source of the specimen is unknown. A limited conodont fauna of 76 elements was recovered from dilute acetic acid preparation of the dinichthyid skull. The fauna contains a number of age diagnostic species which have been used to narrow the possible age and stratigraphic source of the specimen. It is significant that the conodonts indicate a much younger age for the skull than the well known lower Frasnian Gogo fish fauna (Gardiner and Miles 1975), also from the same region.

The conodont faunas from the Canning Basin have been extensively described by Glenister and Klapper (1966), Druce (1976) and Nicoll and Druce (1979), with reviews of previous work found in the latter two publications. Revisions of some of Druce's (1976) identifications by Ziegler (1977, 1981) are here included. Age ranges quoted here for taxa are from Druce (1976). For brevity I include here additional comments only where a species or subspecies name has been changed since the last record of that taxon from the Canning Basin was published; or in the event that a particularly important age-diagnostic form may be of contentious identification or differs somewhat from the previously figured examples of that species.

* Department of Geology, University of Western Australia, Nedlands, Perth, WA 6009.